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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/998,889	11/01/2001	Paul Mertens	99,252-A	7630

7590 04/24/2003

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EXAMINER
CHAUDHRY, SAEED T

ART UNIT	PAPER NUMBER
1746	8

DATE MAILED: 04/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

A9-8

Office Action Summary	Application No.	Applicant(s)	
	09/998,889	MERTENS ET AL.	
	Examiner	Art Unit	
	Saeed T Chaudhry	1746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 February 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 4-6, 8-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4-6 and 8-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. *09/331,021* .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Applicant's preliminary amendments and remarks filed November 10, 2001 have been acknowledged by the examiner and entered. Claims 2-3, 7 and 17 have been canceled and claims 1, 4-6 and 8-16 are pending in this application for consideration.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. § 119, which papers have been placed of record in the file. The current status of all non-provisional parent applications referenced should be included.

Double Patenting

Claims 13 and 14 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 10 and 11 of U.S. Patent No. 6,334,902. Although the conflicting claims are not identical, they are not patentably distinct from each other because one of ordinary skill in the art would use any other means for heating since any other means would have given the same result and inherently produces a sharply defined liquid-ambient boundary on the surface of the substrate.

Claims 1, 4-6, 8-11, 12, 15 and 16 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-5 and 7-13 of U.S. Patent No. 6,334,902 in view of Kunze-Concewitz .

Kunze-Concewitz (5,964,952) discloses a process and apparatus, wherein the substrate is rotated; water is supplied from a nozzle on the substrate; and locally heating the part of the substrate surface, while supplying the liquid. The substrate 21 has water 18 sprayed on it via a water lance 46, thus creating a water film 47 on the

surface 24 of the substrate 21. Via the water lance 46, the water 18 is fed onto the surface 24 at the center 28, so that the water 18 runs off in the direction of the arrows 48 in the form of a water film 47. At the same time, the spray nozzle 1 sweeps over the surface 24 in the direction of the arrow 27 and sprays steam 16 directly into the water film 47.

It would have been obvious at the time applicant invented the claimed process and apparatus to heat liquid on the part of the surface with any other means such as steam disclosed by Kunze-concewitz instead of an energetic beam in the process and apparatus of Patent 6,334,902 since heating with any other means would give the same results of removing liquid from the surface.

The non-statutory double patenting rejection, whether of the obvious-type or non-obvious-type, is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent. In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); In re Van Ornam, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); and In re Goodman, 29 USPQ2d 2010 (Fed. Cir. 1993).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321 (b) and © may be used to overcome an actual or provisional rejection based on a non-statutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.78 (d).

Effective January 1, 1994, a registered attorney or agent of record may sign a Terminal Disclaimer. A Terminal Disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
(c) he has abandoned the invention.
(d) the invention was first patented or caused to be patented, or was the subject of an inventor's certificate, by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application for patent or inventor's certificate filed more than twelve months before the filing of the application in the United States.
(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.
(f) he did not himself invent the subject matter sought to be patented.
(g) before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it. In determining priority of invention there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

Claims 1, 4, 6, 8-9, 13 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated byHunze-Concewitz.

Kunze-Concewitz (5,964,952) discloses a process and apparatus, wherein the substrate is rotated; water is supplied from a nozzle on the substrate; and locally heating the part of the substrate surface, while supplying the liquid. The substrate 21 has water 18 sprayed on it via a water lance 46, thus creating a water film 47 on the surface 24 of the substrate 21. Via the water lance 46, the water 18 is fed onto the surface 24 at the center 28, so that the water 18 runs off in the direction of the arrows 48 in the form of a water film 47. At the same time, the spray nozzle 1 sweeps over the surface 24 in the direction of the arrow 27 and sprays steam 16 directly into the water film 47 (see col. 6, lines 46-61 and Fig. 12) A sharply defined liquid boundary is inherently created since the claimed process and the process of Kunze-Concewitz do the same process steps.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 5, 10-11 and 14 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kunze-Concewitz in view of Leenaars et al.

Kunze-Concewitz was discussed supra. However, the reference fails to specify the rotation speed from 2 to 40 revolutions per second.

Leenaars et al (5,271,774) disclose a process and apparatus for removing liquid from the surface of a semiconductor. The semiconductor is disposed on a turntable 5. The table is provided with a chamber 6. The table is rotatably arranged in the centrifuge 4 on a rotary shaft 8 (see col. 3, lines 6-20). The wafers are cleaned with usual solutions of HF, NH_4 OH-H_2O_2 and HCL-H_2O_2. The wafer is rotated at a speed of rotation of 5 to 8 rev/sec for cleaning (see col. 4, lines 53-56, col. 5, lines 32-36 and claims).

It would have been obvious at the time applicant invented the claimed process to manipulate the speed of rotation for better and efficient results since Leenaars et al disclose to clean the semiconductor from 5 to 8 rev/sec. One of ordinary skill in the art would use cleaning liquid such as HF, NH_4 OH-H_2O_2 and HCL-H_2O_2 as disclosed by

Leenaars et al into the process of Kunze-Concewitz. This is because it is well known in the art as disclosed by Leenaars et al to clean semiconductor with these solutions and rise with water after treatment with the cleaning solution. It would have been obvious at the time applicant invented the claimed apparatus to incorporate a chamber which avoid back splashing of the liquid on the surface of a substrate since Leenaars et al disclose a chamber which prevent the splash of liquid from the surface.

Claim 12 is rejected under 35 U.S.C. § 103 as being unpatentable over Kunze-Concewitz.

Kunze-Concewitz was discussed supra. However, the reference fails to treat the second side with liquid.

It would have been obvious at the time applicant invented the claimed process to utilize Kunze-Concewitz process for using liquid on second side since Kunze-Concewitz discloses to treat both surfaces with steam as disclosed in col. 5, lines 1-14, since Kunze-Concewitz discloses that both the surfaces are cleaned simultaneously. Further, one of ordinary skill in the art would clean the both side with liquid and heat energy to reduce the cleaning time and for faster process.

Claim 16 is rejected under 35 U.S.C. § 103 as being unpatentable over Kunze-Concewitz in view of Hamada et al.

Kunze-Concewitz was discussed supra. However, the reference fails to disclose an arm which carries the nozzle relative to the substrate.

Hamada et al (6,106,635) disclose an arm 25a and a nozzle 25 for jetting liquid on the surface. The arm is being movable relative to the surface (see fig. 3).

It would have been obvious at the time applicant invented the claimed apparatus to incorporate the cited arm as disclosed by Hamada et al into the apparatus. This is because Kunze-Concewitz disclose to move the nozzle relative to the turn table.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saeed T. Chaudhry whose telephone number is (703) 308-3319. The examiner can normally be reached on Monday-Friday from 9:30 A.M. to 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Gulakowski Randy, can be reached on (703)-308-4333. The fax phone number for this Group is (703)-305-7719.

When filing a FAX in Gp 1700, please indicate in the Header (upper right) "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communication with the PTO that are for entry into the file of the application. This will expedite processing of your papers.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0651.

Saeed T. Chaudhry
April 16, 2003

RANDY GULAKOWSKI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700